



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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The **7 October 1999** meeting of the SBMS will have Chuck, WA6EXV and Doug, K6JEY bring noise figure measuring equipment in to check rigs and amplifiers. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway in Corona, CA at 1900 hours local time on the first Thursday of each month.. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>. Thanks to the webmaster Chip, N6CA, there are lots of member pictures and items to read.

Last meeting Doug, K6JEY presented at short talk on tune up of a rigs receiver and coming up with best noise figure and sensitivity. Several methods were described: use of a noise figure meter, a distortion meter and a sinadder. Welcome to new member Gary Dent KE6JUV of Riverside. Welcome to visitors Darrin Taylor (EE looking to become a amateur) of Loma Linda and Dick, N6QFD of Los Angeles. A BIG THANK YOU to Chuck, WA6EXV for doing the newsletter for 3 months while Bill, WA6QYR was off to Boy Scout Camp. Folks wishing to catch the latest info are asked to sign in to the SBMS reflector. One can do this by sending an email to "sbms request@ ham-radio.com" with no title and in the message text the words-- "subscribe (space) your email address". You will then receive an automatic message from the list server with all of the procedures and commands. Being on the list will then get you any traffic being sent to every one on the reflector. Things like where everyone plans to be during the contest is sent to the reflector. 27 people present

Scheduling-

5 Nov. Frequency measuring with Dave, WA6CGR

2 Dec. TBD

6 Jan 2000 TBD

3 Feb. TBD

Wants and Gots for Sale

Want Yaesu 736R Gary KE6JUV 909-784-5468

Want 24 GHz isolator Doug K6JEY 562-424-3737

Want WR-42 90 degree twist, e plane 90 degree bend and waveguide switch Dave WA6CGR 909-237-2524.

For Sale Wavetek 3007 Signal generator 1 KHz-520 MHz \$450 Dick N6QFD 323-258-1647.

WB6IGP has a large quantity of 30 MHz TTL oscillators available for use with wide band FM boomerangs or other test equipment for use with a 30 MHz IF transceivers. Anyone interested in these small TTL oscillators we (San Diego Microwave Group) will be glad to provide 2 or 3 as needed for cost of postage (\$1). They are powered by +5 volts and as large as a 14 pin IC, however has only 4 pins of crystal oscillator package. Pin 1 is +5 volts, pin 2 is ground, and pin 3 is rf out. There available from Chuck Houghton 6345 Badger Lake Ave, San Diego Calif. 92119. Our group has used some of them for boomerangs for 24 GHz as well as lower freq. as well, they work well. Best 73 chuck wb6igp

This is to inform those interested that I have a very large junk box of component parts including transistors, diodes, capacitors, coaxial relays, high voltage and rf relays, vco's, and circulators in this all inclusive list. Some of the parts are general purpose devices with some 50 to 60% usable in the microwave arena. This is the same junk box I build from and some items are low quantity. Items marked with an asterisk (*) are items over 10 each with some going into the hundreds. I will be glad to share material in my junk box to other interested microwave builders at reduced or reimbursement cost. Some material is pulled with a great majority new surplus material picked up over the years. A list of this material will be sent in ASCII format to avoid any problems in attached files to those interested. A short sample of the file on transistors shows a portion of this list. Best 73 chuck wb6igp
HARDWARE INVENTORY TRANSISTORS AND FETS

2N6680 (HP-HFET-1101)

MRF-904 TO-8

NEC-41632E-1D PLASTIC 2SC2407 .6W 2 GHz 1DB NF 70 MHZ

NEC-230320 2W @ 2 GHZ

NEC-230220 2W @ 2 GHz

* NEC-02137 FT 4.5 GHz 1/4W

* NEC-B MICRO-X CERAMIC MARKED "By" 2 GHZ; SIM 02135

* NEC-C MICRO-X CERAMIC MARKED "Ck"-"Cj" 2 GHZ; SIM 02135

* NEC-57835 MICRO-X CERAMIC 6 GHz FT S/Q 2SC2150 NPN

Greetings - I have some 22 to 24 GHz downconverters made by Millwave, similar in design to the Celeritek units seen last year. LO 11.5 GHz nominal, about 15 dBm, IF is 1.3 to 1.8 GHz. wr-42 for rf in, sma's for LO and if. 12 vdc, works at 9 volts. Noise figure about 7.5 dB, total gain about 10 dB on my Eaton 2075.\$30.00 ea. plus postage. - should have put my full address Will Jensby 645 Giannini Dr. Santa Clara, CA 95051 I est postage a \$3.50 for one and \$5.00 for two. more tests today indicate IF goes to 3.5 GHz. very difficult to sweep. more details: size about 1 in by 2 in by 1/4 in. internal is LNA , mixer, LO doubler, and IF amp. draws about 150 ma 73, Will.
WOEOM@aol.com

Activity report at the 2 September meeting- Doug, K6JEY got a DEM 1296 transverter going and had it for show and tell; Gary, W6KVC has been involved with the big fire in the area; KE6JEV has been working with the ATV units on Heaps PK; Gordon, WB6YLI had 31 contest QSOs from his home; Larry, K6HLH had a couple of contest QSOs from Mt. Pacifico; Dave, WA6CGR worked the contest and now has an 18w on 24 GHz; Paul, N6LL worked the contest from Palos Verdes; Derek, KN6TD had his compute die; John, KJ6Z is collecting 2.3 GHz parts; Joe, WA6PAZ worked the contest and now has a 24 GHz spotting generator; Mel, WA6JBD worked 91 mile contact on 24 GHz during the contest; Ed, W6OYJ was on Heaps Pk during the contest with 41 contacts and with all the humidity managed a 91 mile contact with K6OW in Tehachappi; George, K6MBL went to a 50th High school reunion; Bob, W6SYA was on 24 GHz and 10 GHz during the contest; Bill, WA6QYR was at Boy Scout camp for 10 weeks; Chuck, WA6EXV worked a few stations on 10 and 24 GHz during the contest (found out his 30 MHz preamp had died in his 24 GHz rig); Robin, WA6CDR had 48 QSOs during the contest; Dick, WB6DNX was on Heaps Pk during the first half of the contest with several contacts. Jeff, KN6VR was on Heaps Pk during the contest.

An email report from Phil, W6HCC, now in Colorado, indicates that on 24 July he worked Phil, AA0BR over a 40 mile path from Ft. Collins to Cheyenne with S9 signals on 24 GHz. His wide band rig has a harmixer leading to a 432 MHz IF. He has only 1 mw output power and a 10-12 dB NF, but it worked well enough for a good contact. Congratulations Phil on getting back on microwaves after 2 years of moving and settling in.

The **second half of the 10 GHz contest** as viewed from Heaps Pk by WA6QYR. -- Chuck, WA6EXV and I arrived late Friday afternoon on the hill top to be ready for some sunup contacts to explore the longer ranges it has to offer. There had been thunder storm activity in the area, but was clear and dry on the tops of the San Bernardino mountains at 6000 ft and higher. Dishes were set up and checked out with a 10 GHz to Mel, WA6JBD at twilight. Chuck had taken his dish down and removed amplifiers in case of winds during the night. I had covered the expensive pieces, but left everything ready to go at 0500 for warm up since the trailer mounted dish was stable in 55 mph winds driving down the highways. About midnight I was awakened by the sounds of rain on the shell to my pickup. Well it was up in pjs getting wet to bring radios, transverter, preamp, and TWT into the shelter of the pickup. Dew was one thing but a cloud burst was something else. By the time all was inside, I was soaked and the rain stopped. It was dry the rest of the night. There continued the lightning off over the desert that we had watched before, but still no threat to us. Back to bed for a few more hours of sleep before reassembling the set up at 05:30. Well sunrise came and went without hearing anyone on the liaison radios. It wasn't until 06:34 that we made first contact on 24 GHz with K6OW and 0725 for 10 GHz with WA6JBD. Other mountain tops had people waiting for rain to clear before contacts were attempted. Robin, WA6CDR had gone to Mt. St. Helena CM88qp, but the 695 km 10 GHz contact with him didn't occur until 1525 via cloud bounce. Signals were real distorted and the path was some 30 degrees off the direct route as seen by 3 stations on Heaps, DM14kf. Dave, WA6CGR had gone to San Benito CM96xr to work the guys in northern CA on 10 and 24 GHz, but weather between Heaps and Benito didn't allow contacts to take place until the next day when Dave, K6OW was on Benito. What should have been an easy SSB 10 GHz 383 km contact to Benito was down to CW. WA6CGR had transverter problems on Saturday. Joe, WA6PAZ had driven from Los Angeles area to Frazier MT. DM04ms only to have equipment problems. There were several rovers out making contacts on both bands; Mel, WA6JBD, Dave, K6OW, Ken WB6DTA, Bob, W6SYA, Ron, K6GZA. The San Diego Microwave Group had several people out on the hill tops. Ed, W6OYJ, Kerry, N6IZW, John, WB6BKR, Art, KC6UQH. The San Diego crew had several folks out for their first contacts on 24 GHz wide band. Conditions between San Diego and Los Angeles were very poor on both bands. Several folks were on from home locations; Chip, N6CA, Gordon, WB6YLI, Robin moved to Mt. Vaca on Sunday for more contacts, but conditions to Heaps didn't allow signals to be heard. A number of northern CA people were out on hill tops, but conditions didn't allow contacts with Heaps. Some exchanges were made to San Diego down the central valley when things were just right. Some calls heard on the liaison radio were AA6IA, K6KLY, W6ASL, K6GZA.

On a side note it was evident that another FM station had been added to the already chaotic EM environment of Heaps PK. All the shielding done from previous bad experiences on Heaps again was insufficient to keep intermods out of the 24 GHz receivers. Trying to use analog or digital voltmeters was a joke. Just holding the leads got readings of several volts. Indications of 19 volts on a 12 deep cycle battery was crazy. My ICOM 3200 dual band FM radio didn't like the EM either. I finally found that placing about 15 inches of clip lead on the mic connector let it receive in the 450 band without some of the extra muted times or extra beeps and noises. Bill

Email from Dave, WA6CGR indicates a total score of 27,865 with 104 QSOs 29 different calls and best DX on 10 GHz of 510 km and on 24 GHz of 139 km. Check out his web site "<http://web3.clubnet/wa6cgr>" for pictures of the second contest weekend.

Data from Robin, WA6CDR who operated from two sites in Northern CA. Mt. St. Helena CM88qp and Mt. Vaca CM88wj. He had 102 qsos total for 4 days, longest 835 Km St. Helena to Baja San Diego in DM12Lq with N6IZW, about 25 Km south of Jack, N6XQ. It was most unusual. for most of us, Sunday of the second weekend had far and away the most qsos! Rovers and rovers. Two guys from the bay area came out and worked the San Joaquin valley, really nice to have the activity. K6OW and WA6CGR also roved and went everywhere.

From San Diego--The following San Diego County Amateurs participated in the 1999 ARRL

10 GHz and Up Contest: On 10 GHz: WB6BKR, W6DXJ, WD6FWE, WB6IGP, N6IZW, KF6NKC, W6OYJ, KC6QHP, KC6UQH, and N6XQ. On 24 GHz: WB6BKR, K6BTO, N6IZW, AE6L, W6OYJ, and KC6QHP. Best reported 10 GHz DX contacts were by N6IZW (DM12LQ) 517 miles and N6XQ

(DM12JR) 509 miles with WA6CDR (CM88QP) on Mt. St. Helena. N6XQ reported several contacts with stations in N. Calif. including W6ASL, K6GZA and WA6CDR on Mt. Vaca CM88wj and many contacts with roving K6OW and WA6CGR in various locations. W6OYJ reports 59 QSOs on 10 GHz SSB/CW/WBFM, average DX 139 km (TX=0.3W), and 16 QSOs on 24 GHz WBFM, average DX 46 km (TX=.005W). W6OYJ's best DX was 499 km on 10 GHz with WA6CGR, and 147 km on 24 GHz. with K6OW.

Besides Mt. Soledad, The locals operated from a number of other sites including Mt. San Miguel, Santiago Peak, Paradise Valley Park, Point Loma, Cowles Mtn. Camp Pendleton hiway viewpoint, and Signal Hill. 73s from Ed, W6OYJ

Some more email received over the summer-- I've recently made some improvements to the line-of-sight code that I demonstrated at a NEWS meeting a year or so ago. Now you can request plots of the path between any two six-character grid squares or between two lat/lon points. The server does NOT answer in real time. The user fills out a web-form, and the plots (GIF files) are mailed back in about a day or so. (The server collects all the requests made during the day and processes them around midnight every night. Murphy is on taics payroll though, so sometimes requests don't get handled until the next morning.) There are still a few bugs in the process (I like to call them anomalies) and I only have maps for the US. On the other hand, the plots can be quite illuminating. Try the service out at: http://www.taic.net/users/reilly/los_form.html. As always, commercial use is not allowed- this service is for hobby use only. matt(kb1vc).

